

## Specification Amendments

Page 13, lines 17-27:

There are many ways to represent information.

"Information transforms" (also called "mathematical transforms") are useful tools that preserve information between different representations. For example, the DNA sequence

~~ACGT AAGT AAAT AAAA~~

adenosinecytidineguanosinethymidine adenosineadenosineguanosinethymidine

adenosineadenosineadenosinethymidine adenosineadenosineadenosineadenosine

can be equivalently represented by four 0/1 sequencing ladders. The "A" ladder is:

1000 1100 1110 1111

The information contained in the "four letter sequence" is identical to that in the four 0/1 ladders. Indeed, this ladder representation is the basis of Sanger sequencing.

Page 22, lines 5-18:

An experiment was conducted that used synthesized CA-repeat oligonucleotide templates. The three templates contained  $(GT)_n$ ,  $n = 1, 2, 3$ , and were 5' biotinylated for purification steps. The sequencing primer was fluorescently labeled (NED dye; PE

Biosystems, Foster City, CA) on the 5' end in order to estimate quantities related to the number of DNA strands. A poly-A tail was added for better sequencer detection. The complementary sequences used were:

~~5' NED-A<sub>10</sub> GTTTCCCAGTCACGA 3'~~

~~3' CAAAAGGTCAGTGCT-(GT)<sub>n</sub>-CCAA Biotin 5'~~

5'-NED-A<sub>10</sub>-guanosinethymidinethymidinethymidinethymidinecytidinecytidinecytidineadenosineguanosinethymidinethymidinecytidineadenosinecytidineguanosineadenosine-3'  
3'-cytidineadenosineadenosineadenosineadenosineguanosineguanosineguanosinethymidinecytidineadenosineguanosinethymidinethymidine-(GT)<sub>n</sub>-cytidinecytidineadenosineadenosine-Biotin-5'

Extension from the sequencing primer forms a (CA)<sub>n</sub> subsequence, followed by a G. The biotinylated "...GCT-(GT)<sub>n</sub>-CCA..." template shall be loosely referred to herein by its complementary "(CA)<sub>n</sub>G" name.

Page 23, lines 1-6:

The result of a sequencing reaction is a collection of 5' labeled molecules (n = 1,2,3):

~~5'-NED-A<sub>10</sub>-GTTTCCCAGTCACGA (CA) 3'~~

~~along with a full-length molecule labeled at both the 5' and 3' ends.~~

5'-NED-A<sub>10</sub>-GTTTCCCAGTCACGA (CA)<sub>3</sub>-G-JOE-3'

5'-NED-A<sub>10</sub>-guanosinethymidinethymidinethymidinethymidinecytidinecytidinecytidine

adenosineguanosinethymidinethymidinecytidineadenosinecytidineguanosineadenosine-(CA)-3'

along with a full-length molecule labeled at both the 5' and 3' ends:

5'-NED-A<sub>10</sub>-guanosinethymidinethymidinethymidinethymidinecytidinecytidinecytidine

adenosineguanosinethymidinethymidinecytidineadenosinecytidineguanosineadenosine-(CA)<sub>3</sub>-G-JOE-3'